

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/843,765

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented): A slitter blade assembly for cutting off a workpiece, comprising:
 - a drum-shaped rotary blade; and
 - a disk-shaped rotary blade;

said disk-shaped rotary blade having a cutting edge, a first beveled surface facing said drum-shaped rotary blade and progressively spaced from said drum-shaped rotary blade toward said cutting edge, and a second beveled surface facing the workpiece and progressively spaced from said cutting edge away from the workpiece, wherein a first distance (CL) of said first beveled surface up from said cutting edge along a severance plane perpendicular to a surface of the workpiece is set to a value which ranges from 40 μm to 200 μm and a first angle (θ_6) of said first beveled surface from said severance plane is set to a value which ranges from 0.8° to 14°.
2. (Previously Presented): A slitter blade assembly according to claim 1, wherein a second angle (θ_1) of said second beveled surface from said severance plane is set to a value which ranges from 65° to 85°.
3. (Previously Presented): A slitter blade assembly according to claim 2, wherein said disk-shaped rotary blade has a first clearance surface contiguous to said first beveled surface, and a third angle (θ_3) of said first clearance surface from said severance plane is set to a value which ranges from 2° to 5°.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/843,765

4. (Previously Presented): A slitter blade assembly according to claim 2, wherein said disk-shaped rotary blade has a second clearance surface contiguous to said second beveled surface, and a fourth angle (θ_2) of said second clearance surface from said severance plane is set to a value which ranges from 20° to 45° .

5. (Previously Presented): A slitter blade assembly according to claim 4, wherein said second beveled surface and said second clearance surface are joined to each other at a junction, and a second distance (L_1) from said junction to said severance plane is set to a value which ranges from 0.2 mm to 0.8 mm.

6. (Previously Presented): A slitter blade assembly for cutting off a workpiece, comprising:

a drum-shaped rotary blade; and

a disk-shaped rotary blade;

said disk-shaped rotary blade having a cutting edge, a first beveled surface facing said drum-shaped rotary blade and progressively spaced from said drum-shaped rotary blade toward said cutting edge, and a second beveled surface facing the workpiece and progressively spaced from said cutting edge away from the workpiece, wherein said cutting edge of the disk-shaped rotary blade has irregularities along a circumference of the disk-shaped rotary blade, said irregularities having an irregularity quantity (G) set to a value which ranges from 0.5 μm to 5 μm .

7. (Original): A slitter blade assembly according to claim 1, wherein said disk-shaped rotary blade and/or said drum-shaped rotary blade is made of a cemented carbide.

8. (Withdrawn): A slitter blade assembly for cutting off a workpiece, comprising:

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/843,765

a drum-shaped rotary blade; and

a disk-shaped rotary blade;

said drum-shaped rotary blade having a cutting edge and a third beveled surface facing said disk-shaped rotary blade and progressively spaced from said disk-shaped rotary blade toward said cutting edge.

9. (Withdrawn): A slitter blade assembly according to claim 8, wherein the distance HL of said third beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece is set to a value which ranges from $25 \mu\text{m}$ to $500 \mu\text{m}$, and the angle $\theta 5$ of said third beveled surface from said severance plane is set to a value which ranges from 0.0° to 0.6° .

10. (Withdrawn): A slitter blade assembly according to claim 9, wherein said drum-shaped rotary blade has a third clearance surface contiguous to said third beveled surface, and the angle $\theta 4$ of said third clearance surface from said severance plane is set to a value which ranges from 2° to 4° .

11. (Withdrawn): A slitter blade assembly according to claim 8, wherein said disk-shaped rotary blade and/or said drum-shaped rotary blade is made of a cemented carbide.

12. (Withdrawn): A slitter blade assembly for cutting off a workpiece, comprising:

a drum-shaped rotary blade; and

a disk-shaped rotary blade;

said disk-shaped rotary blade having a cutting edge, a first beveled surface facing said drum-shaped rotary blade and progressively spaced from said drum-shaped rotary blade toward said cutting edge of the disk-shaped rotary blade, and a second beveled surface facing the

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/843,765

workpiece and progressively spaced from said cutting edge of the disk-shaped rotary blade away from the workpiece;

 said drum-shaped rotary blade having a cutting edge and a third beveled surface facing said disk-shaped rotary blade and progressively spaced from said disk-shaped rotary blade toward said cutting edge of the drum-shaped rotary blade.

13. (Withdrawn): A slitter blade assembly according to claim 12, wherein said disk-shaped rotary blade and/or said drum-shaped rotary blade is made of a cemented carbide.

14. (Withdrawn): A slitter blade assembly according to claim 12, wherein the distance CL of said first beveled surface up to said cutting edge along a severance plane perpendicular to a surface of the workpiece is set to a value which ranges from 40 μm to 200 μm , the angle θ_6 of said first beveled surface from said severance plane is set to a value which ranges from 0.8° to 14°, the angle θ_1 of said second beveled surface from said severance plane is set to a value which ranges from 65° to 85°, the distance HL of said third beveled surface up to said cutting edge along a severance plane is set to a value which ranges from 25 μm to 500 μm , and the angle θ_5 of said third beveled surface from said severance plane is set to a value which ranges from 0.0° to 0.6°.

15. (Previously Presented): A slitter blade assembly according to claim 1, wherein said cutting edge is spaced apart from the severance plane perpendicular to a surface of the workpiece.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/843,765

16. (Previously Presented): A slitter blade assembly according to claim 1, further comprising a means for rotating the drum-shaped rotary blade in unison with the disk-shaped rotary blade.

17. (Previously Presented): A slitter blade assembly for cutting off a workpiece, comprising:

a drum-shaped rotary blade; and

a disk-shaped rotary blade;

said disk-shaped rotary blade having a cutting edge, a first beveled surface facing said drum-shaped rotary blade and progressively spaced from said drum-shaped rotary blade toward said cutting edge, and a second beveled surface facing the workpiece and progressively spaced from said cutting edge away from the workpiece, wherein the drum-shaped rotary blade is disposed on a drum shaft, the disk-shaped rotary blade is disposed on a disk shaft, and the slitter blade assembly further comprising a means for rotating the drum shaft in unison with the disk shaft.

18. (Previously Presented): A slitter blade assembly according to claim 6, wherein said irregularities having one of saw-tooth shape and undulating shape and said irregularity quantity being a distance from a bottom to a top of one of the irregularities.

19. (new): A slitter blade assembly according to claim 17, wherein the drum shaft and the disk shaft are operably connected to rotate in unison.

20. (new): A slitter blade assembly according to claim 17, wherein the drum shaft and the disk shaft are operably connected through gears.